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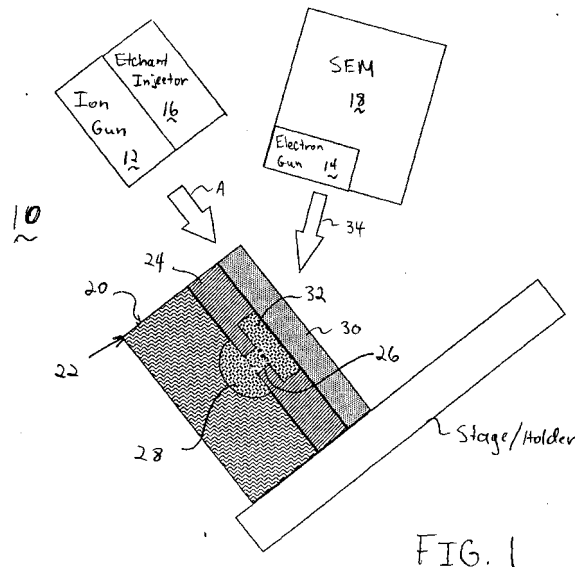
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(54) **In-situ method for preparing and highlighting of defects for failure analysis of semiconductor chips**

(57) In accordance with the present invention, a method for inspecting a sample for failures includes the steps of determining a target area for observation on the semiconductor sample (100), preparing a region in proximity to the target area to provide access to the target area (102), and mounting the sample into a chamber (104). The chamber provides a capability for removing material in proximity of the target area, and provides a

capability for observing the sample in-situ. The sample is maintained in the chamber while performing the following steps: etching a first material selective to a second material such that the target area has the first material removed therefrom to expose the second material (108), and monitoring the progress of the etching step to determine a time to discontinue the etching (110).





DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int.Cl.7)
X	US 5 093 572 A (HOSONO ET AL) 3 March 1992 (1992-03-03) * abstract * * column 1, line 19 - column 2, line 62 * * column 4, line 40 - column 6, line 32 * * figure 1 *	1-3,9,19	H01L21/66
Y		7,8, 10-12, 15-18, 20-22	
A		4-6,13, 14	
Y	----- CASEY J D ET AL: "GAS-ASSISTED ETCHING WITH FOCUSED ION BEAM TECHNOLOGY" MICROELECTRONIC ENGINEERING, ELSEVIER PUBLISHERS BV., AMSTERDAM, NL, vol. 24, no. 1/4, 1 March 1994 (1994-03-01), pages 43-50, XP000447427 ISSN: 0167-9317 * the whole document *	7,8, 10-12, 15-18, 20-22	
A		1-3,19	TECHNICAL FIELDS SEARCHED (Int.Cl.7)
A	----- PATENT ABSTRACTS OF JAPAN vol. 1998, no. 02, 30 January 1998 (1998-01-30) -& JP 09 274883 A (HITACHI LTD), 21 October 1997 (1997-10-21) * abstract * ----- -/--	1-3, 8-12, 17-19, 21,22	H01L G01N
The present search report has been drawn up for all claims			
Place of search Berlin		Date of completion of the search 12 August 2005	Examiner Morena, E
CATEGORY OF CITED DOCUMENTS X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document		T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons ..... & : member of the same patent family, corresponding document	



European Patent  
Office

EUROPEAN SEARCH REPORT

Application Number  
EP 00 10 3835

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A	US 5 064 498 A (MILLER ET AL) 12 November 1991 (1991-11-12) * column 1, line 29 - line 47 * * column 2, line 39 - line 45 * * figure 4 *  -----	10,19, 20,22
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Berlin	12 August 2005	Morena, E
<p>CATEGORY OF CITED DOCUMENTS</p> <p>X : particularly relevant if taken alone                      Y : particularly relevant if combined with another document of the same category                      A : technological background                      O : non-written disclosure                      P : intermediate document</p>		<p>T : theory or principle underlying the invention                      E : earlier patent document, but published on, or after the filing date                      D : document cited in the application                      L : document cited for other reasons                      .....                      &amp; : member of the same patent family, corresponding document</p>

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**ANNEX TO THE EUROPEAN SEARCH REPORT  
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EP 00 10 3835

This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report. The members are as contained in the European Patent Office EDP file on  
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